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RUEHLO/AMEMBASSY LONDON 0138
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SUBJECT: Rossing Uranium Mine Has Ambitious Plans

REF: WINDHOEK 159

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Summary

¶1. (SBU) Rio Tinto's Rossing Uranium is Namibia's flagship mine. It has been in continuous operation since 1976. The mine currently produces about 7.8 percent of global uranium oxide (U3O8) and expects to increase to 10 percent by 2012 when current expansions are completed. Rossing accounts for seven percent of Namibia's GDP. Due to an extended period of low uranium prices during the 1990's and early 2000's, the mine was scheduled to be closed in 2007. The upturn in prices since 2003, however, has ensured the mine's continued profitable operation and survival. The life of the Rossing Uranium mine could be extended beyond the current estimated 20 years, but this depends on continued expansion of the nuclear power industry and technology developments. End Summary.

Uranium Supplies

¶2. (SBU) Namibia is the fourth supplier of uranium in the world. Rossing Uranium, in combination with Paladin Resources' Langer Heinrich mine, produces 10-11 percent of global U3O8 supply. This could increase to 20 percent by 2015, if all proposed and planned new developments of some eighteen identified uranium prospects and projects go ahead (septel).

Rossing Uranium Mine

¶3. (SBU) Emboffs from Embassy Pretoria and Embassy Windhoek visited Rio Tinto's Rossing Uranium mine on April 2. Rossing Uranium Mine exploits one of the biggest and only economically viable granite-hosted (alaskite) uranium deposits in the world. The mine, located about 70 kilometers north-east of the coastal town of Swakopmund, covers a license area of 180 square kilometers, yet only

20 square kilometers are in operation. Rossing has mined one billion tons of rock and produced 80,000 tons of uranium oxide (U3O8 or yellow cake), equivalent to 16 percent of global demand, since the mine opened in 1976. Total uranium oxide production was 9.0 million pounds (approximately 4,000 tons) in 2008, up from 6.7 million pounds (3,000 tons) in 2007. The mine's designed capacity is 10 million pounds per year (4,500 tons), which Rossing plans to reach in 2012.

14. (SBU) The mine currently produces about 7.8 percent of global U3O8 which is projected to increase to 10 percent by 2012 when current expansions are completed. Rossing also accounts for seven percent of Namibia's GDP. A feasibility study to expand mine output by 1,000 tons of U3O8 (to 10 million pounds per year) was carried out in 2008. Approval for the project is expected in mid-2009. Low-grade ore is currently being stockpiled for that purpose.

Economics and Marketing of Rossing's Uranium

15. (SBU) Rossing Mine's prospects have fluctuated with uranium prices in recent years. In December 2003, demand for U3O8 was low, costs were increasing, and the spot price was below \$15 per pound. At the time the mine was projected to close by 2007. Spot and contract prices have since increased as a result of perceived future uranium shortages, with a peak of \$136 per pound in mid-2007. Despite the current drop to \$40-\$50 per pound, Rossing's uranium is sold on long-term contracts with an estimated average price of USD 68 per pound. Contracts are typically for 3-5 years with delivery

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lead-times of 2-4 years. Rossing and its customers negotiated new long-term contracts in 2007. Rossing's selling price moves with the spot price for uranium within a certain band (i.e. there is a price floor and ceiling). The recent fall in the uranium spot price has pushed the selling price closer to the price floor thus suppressing Rossing's margins on each barrel of yellow cake delivered. Sales destinations for Rossing's uranium are:

- 41 percent to North America;
- 24 percent to Japan;
- 25 percent to Asia; and
- 10 percent to the European Union.

Rio Tinto has a 69 percent equity stake in Rossing Uranium and controls the mine's operations (reftel).

Rossing Mineral Deposit

16. (SBU) Geologically, the Rossing deposit is unique in that it is the largest known granite-hosted primary uranium orebody of economic importance in the world. Most other deposits are based on secondary mineralization, the uranium having been leached out of primary rocks and precipitated as a secondary accumulation elsewhere -- in river beds for example. The Rossing deposit is low-grade, averaging 200-300 parts per million (ppm) or 0.02-0.03 percent uranium. Its primary mineral is uraninite (uranium dioxide or UO2), plus other minor secondary minerals. The presence of calcium in the deposit consumes large quantities of leach acid and renders sections of would-be ore unprofitable.

Conventional Mining at Rossing

17. (SBU) Rossing is an open-pit mine that employs conventional drilling, blasting, loading, and hauling methods to exploit the deposit. The pit currently covers an area of 3-by-1.2 square kilometers and is more than 345 meters deep. The mine produced 4,000 tons of U3O8 or "yellow cake" in 2008, from 47 million tons of mined rock, of which 13 million tons was treatable ore. The operation consumed 3.5 million cubic meters of fresh water (to

supplement water recycled from the plant) and required 32 megawatts of power. Ore is transported to primary crushers and then conveyed to a coarse ore stockpile to await further processing. Low-grade product is stockpiled for later processing via heap-leaching, and waste is stacked on permanent waste dumps. A full explanation of Rossing's method to recover uranium from ore is available at: http://www.rossing.com/uranium_production.htm

Water is Precious - Recycle and Desalinate Sea Water

18. (SBU) Namibia is an arid country and the Rossing mine area normally receives annual rainfall of only about 30 millimeters. However, this occurs as torrential downpours resulting in flash-flooding that can damage civil works and mining operations, so the mine has employed a number of water mitigation and capture programs. Rossing recycles 60-70 percent of its process water and replenishes it annually with about 3.5 million cubic meters of fresh water, which is pumped from stations located in the local river beds. Underground water is continuously monitored for traces of uranium pollution. However, the prevalence of uranium in the surrounding rocks and the lack of data on naturally-occurring uranium levels in the area make it difficult to assign blame for uranium pollution to the mine. Rossing is attempting to establish a baseline of naturally-occurring background radiation exposure. (Note. The French nuclear company Areva is building a \$165-million desalinization plant near the town of Swakupmund to supply water to its Trekkopje Uranium Project under development. Excess water will be sold to local water authorities and mines. End Note.)

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Mine Health and Safety Taken Seriously

19. (SBU) Rossing mine recently achieved 2-million man-hours of work without a major incident that has interrupted operation of the mine. On the health side, although the mine has low-grade ore and consequently low-grade radiation that is only slightly higher than the levels occurring naturally, intake of radioactive dust and exposure to radiation by staff is regularly monitored. HIV/AIDS was not raised as a major issue by mine management. According to management and the Namibian Chamber of Mines health advisor Dr Wotan Swiegers, the relative isolation of local communities around Rossing has limited the incidence of AIDS at the mine to less than 10 percent, compared to the country's average of 15.4 percent. Nevertheless, the mine provides clinical facilities and anti-retro-viral medication to employees paid for by the company's medical insurance.

Labor Skills are Scarce but Improving

110. (SBU) Namibians makeup 97 percent of Rossing's labor force, more than half of whom have been in service for 15 years. The mine has a labor pool of 1,300 permanent employees and 400 contractors, yet still faces a shortage of skilled people. With several new uranium mines coming on-line in the next two years, Rossing is poised to lose some of its most experienced and skilled personnel. It has already lost some personnel to Paladin Resources' Langer Heinrich mine. However, the global economic downturn has resulted in the closure of four Namibian copper mines, and the halting of most diamond mining operations, freeing up labor for operational mines such as Rossing.

Socio-Economic Development a Major Goal

111. (SBU) The nearby town of Arandis was established in 1976 by the Rossing mine to house mine employees. Despite being proclaimed an independent town in 1994, when the mine was originally scheduled to close Arandis was still almost completely dependent on Rossing for

its survival. In response, Rossing opened its Rossing Foundation office in Arandis. The Foundation strives to provide residents and their children with advanced, practical competencies in English, reading, science, and mathematics. This includes small business training, health facilities, support for small businesses and miners, and a computer-based, voluntary, educational center for school children, teachers, and parents. The Foundation became fully operational in January 2004.

Embassy Team Visit to Rossing Uranium

¶12. (SBU) Embassy Windhoek wishes to thank Embassy Pretoria's David Young and Paul White for their assistance with the Rossing visit.

MATHIEU